CIVIL TECH LABS

Accredited by NABL as per ISO/ IEC 17025 : 2005

5, 1st Cross, Srinivasa Colony, Mission Road, Bangalore - 560027

Ph: 080 - 4114 2867 / Mob. : 96862 31801, Email: civiltechlabs@gmail.com

T-2654

To,

Assistant Executive Engineer,
Yelahanka Satellite Sub Division,
BBMP.

22nd April 2016

Dear Sir,

Sub: Testing of Semi Dense Bituminous Concrete.

As requested, tests on physical properties were carried out for the Semi Dense Bituminous Concrete supplied by you, for the work of **'Improvements of roads and drains in A Sector in ward no. 04, Yelahanka New Town Sub Division.'**

Please find the enclosed Test Reports of the above.

Thanking You,
For Civil Tech Labs

Khushboo

CIVIL TECH LABS BANGALORE

(KHUSHBOO L.)
Quality Manager

Ramdaigeer AE

22/4

CIVIL TECH LABS

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TEST REPORT

TESTS ON BITUMEN SAMPLE

Name & Address of the Customer	AEE, Yelahanka Satellite Sub Division, BBMP
Name of Work	Improvements of roads and drains in A Sector in ward no. 04, Yelahanka New Town Sub Division
Name of the Agency	Sri. B. P. Mahesh.
Date of Testing	19/04/2016

Paving Grade of Bitumen - 80-100 Grade

Sl.No.	Name of the Test	Test As Per IS Code	Result	Specification as Per IS 73 : 2006	Remarks
1	Specific Gravity @ 27° C	IS : 1202-1978	0.98	0.97 - 1.02	Pass
2	Flash Point °C	IS : 1209-1978	237	Minimum 220°C	Pass
3	Fire Point °C	IS : 1209-1978	258	Not Specified	Pass
4	Softening Point (R&B) °C	IS : 1205-1978	55	Minimum 40°C	Pass
5	Penetration @ 25 °C 100g & 5 S, 0.1 mm	IS : 1203-1978	83	80-100	PASS
6	Ductitily @ 25°C in Cm	IS : 1208-1978	80.5	Minimum 75 cm	Pass

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4. The results are based on the test conducted on samples supplied by the client.

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TEST REPORT

TEST ON AGGREGATES ('AIV' & Combined Flakiness & Elongation Index)

Semi Dense Bituminous Concrete

Name & Address of the Customer	AEE, Yelahanka Satellite Sub Division, BBMP
Name of Work	Improvements of roads and drains in A Sector in ward no. 04, Yelahanka New Town Sub Division.
Name of Agency	Sri. B. P. Mahesh.
Date of Testing	19/04/2016
Reference	MORTH Table 500-14

Sl. No	Aggregate Impact Value 'AIV' in %	Average AIV in %	Remarks
1	20.6	20.9	Satisfactory (As per MORTH for SDBC, Maximum allowed AIV is 27 %)
2	21.1		

Test	Result in %	Combined Flekiness & Elongation Index 'C-F&E' in %	Remarks
Flakiness Index	11.2	23.7	Satisfactory (As per MORTH for SDBC, Maximum allowed 'C-F&E' is 30 %)
Elongation Index	12.5		

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TEST REPORT

STRIPPING TEST OF ROAD AGGREGATES

Semi Dense Bituminous Concrete

Name & Address of the Customer	AEE, Yelahanka Satellite Sub Division, BBMP
Name of Work	Improvements of roads and drains in A Sector in ward no. 04, Yelahanka New Town Sub Division.
Name of Agency	Sri. B. P. Mahesh.
Date of Testing	19/04/2016

Method of Test	Observation No.	Uncovered Area/Stripping in %	Average Stripping Value in %	As Per Morth Table 500-14	Remarks
IS 6241-1971 (Reaffirmed 2003)	1	3.6	3.8	5 % Maximum	Satisfactory
	2	3.8			
	3	3.9			

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TEST REPORT

TEST ON THE DETERMINATION OF BITUMEN CONTENT ON SEMI DENSE BITUMINOUS CONCRETE MIX-GRADE 2

Name & Address of the Customer	AEE, Yelahanka Satellite Sub Division, BBMP
Name of Work	Improvements of roads and drains in A Sector in ward no. 04, Yelahanka New Town Sub Division.
Name of the Agency	Sri. B. P. Mahesh.
Date of Testing	22/04/2016

A)

Sl. No.	Test	Test Method	Technical Reference
1	Extraction of mineral aggregate	Test Method A (Centrifuge Method)	ASTM: D2172/ D2172M-11
2	Determination of amount of mineral matter/fines in the extract	Ashing Method	

B)

Specification: As Per MORTH (4th Revision) Table 500-15, Bitumen Content for SDBC Grade-2 is MIN 5%		
Sl. No.	**Description**	**Values**
1	Weight of bituminous mixture before extraction test, W_1 g	2000
2	Weight of mineral aggregate obtained from centrifuge extractor, W_2 g	1883.6
3	Weight of mineral matter in the total volume of extract (by ashing), W_3 g	12.3
4	Total weight of aggregate in the bituminous mixture, W_4 g = (W_2 + W_3) g	1895.9
5	Total weight of Bitumen extracted from the mixture, W_5 g = (W_1-W_4) g	104.1
6	Bitumen content in %, (W_5/W_1) %	5.21

Remarks	**Satisfies the requirements.**

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T-2654

To,

Assistant Executive Engineer,
Yelahanka Satellite Sub Division,
BBMP.

18th April 2016

Dear Sir,

Sub: Testing of Wet Mix Macadam.

As requested, tests on physical properties were carried out for the Wet Mix Macadam supplied by you, for the work of **'Improvements of roads and drains in A Sector in ward no. 04, Yelahanka New Town Sub Division.'**

Please find the enclosed Test Reports of the above.

Thanking You,
For Civil Tech Labs

CIVIL TECH LABS BANGALORE

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Ram Sanjeev AE

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TEST REPORT

GRADATION TEST ON WET MIX MACADAM

Name & Address of the Customer	AEE, Yelahanka Satellite Sub Division, BBMP
Name of Work	Improvements of roads and drains in A Sector in ward no. 04, Yelahanka New Town Sub Division.
Name of the Agency	Sri. B. P. Mahesh.
Date of Testing	18/04/2016
Technical Reference	MORTH Table 400-11

IS Sieve Designation (mm)	% By Weight Passing IS Sieve	Actual % By Weight Passing IS Sieve	Remarks
53	100	100	Satisfy the Requirements
45	95-100	98.5	
22.4	60-80	73.4	
11.2	40-60	52.6	
4.75	25-40	32.4	
2.36	15-30	24.6	
0.6	8-22	18.2	
0.075	0-8	7.1	

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TEST REPORT

COMPRESSIVE STRENGTH TEST ON CONCRETE CUBES

Name & Address of the Customer	AEE, Yelahanka Satellite Sub Division, BBMP
Name of Work	Improvements of roads and drains in A Sector in ward no. 04, Yelahanka New Town Sub Division.
Name of Agency	Sri. B. P. Mahesh.
Grade of Concrete	M-20
No. of cubes tested	3
Technical Reference	IS: 516-1959 (Reaffirmed 2013)

Sl. No.	ID	Dimension of specimen (mm)	Cross sectional area (mm^2)	Date of Casting	Date of Testing	Age at test (Days)	Weight (Kg)	Failure Load (KN)	Compressive Strength (N/mm^2)	Avg Compressive Strength (N/mm^2)
1	Sample-2	150.09 X 150.11 X 150.0	22530	10/03/2016	07/04/2016	28	8.17	485	21.56	21.93
2		150.07 X 150.10 X 150.0	22526				8.19	490	21.78	
3		150.08 X 150.06 X 150.0	22521				8.21	505	22.44	

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TEST REPORT

GRADATION TEST ON COARSE AGGREGATES 20mm ↓ Graded

Name & Address of the Customer	AEE, Yelahanka Satellite Sub Division, BBMP
Name of Work	Improvements of roads and drains in A Sector in ward no. 04, Yelahanka New Town Sub Division.
Name of Agency	Sri. B. P. Mahesh.
Date of Testing	04/03/2016
Specific Gravity	2.63
Water Absorption	0.31%
Technical Reference	IS : 2386(Part I)-1963 (Reaffirmed 2011), IS : 2386 (Part III)-1963 (Reaffirmed 2011)

IS Sieve Designation (mm)	Sieve Analysis (% Passing IS Sieve)	Grading Requirement as per IS:383-1970 (Reaffirmed 2011)	Remarks
40	100	100	Satisfies the requirement
20	97.4	95-100	
10	43.5	25-55	
4.75	7.4	0-10	

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TEST REPORT

GRADATION TEST ON FINE AGGREGATES

Name & Address of the Customer	AEE, Yelahanka Satellite Sub Division, BBMP
Name of Work	Improvements of roads and drains in A Sector in ward no. 04, Yelahanka New Town Sub Division.
Name of Agency	Sri. B. P. Mahesh.
Date of Testing	04/03/2016
Specific Gravity	2.55
Technical Reference	IS : 2386(Part I)-1963 (Reaffirmed 2011), IS : 2386 (Part III)-1963 (Reaffirmed 2011)

Sample	IS Sieve designation (mm)	Sieve Analysis (% Passing IS Sieve)	Grading Requirement as per IS:383-1970 (Reaffirmed 2011)				Grading Zone	Remarks
			ZONE-I	ZONE-II	ZONE-III	ZONE-IV		
River Sand	10	100	100	100	100	100	II	Satisfies the requirement
	4.75	98.5	90-100	90-100	90-100	95-100		
	2.36	85.2	60-95	75-100	85-100	95-100		
	1.18	74.6	30-70	55-90	75-100	90-100		
	0.6	47.9	15-34	35-59	60-79	80-100		
	0.3	23.5	5-20	8-30	12-40	15-50		
	0.15	8.4	0-10	0-10	0-10	0-15		

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TEST REPORT

TESTS ON REINFORCEMENT STEEL BAR 10mm

Name & Address of the Customer	AEE, Yelahanka Satellite Sub Division, BBMP
Name of Work	Improvements of roads and drains in A Sector in ward no. 04, Yelahanka New Town Sub Division.
Name of the Agency	Sri. B. P. Mahesh.
Date of Testing	04/03/2016
Grade of Steel	Fe - 500.

Sl.No.	Description	Result	IS 1786-2008 Min. Requirements	Remarks
1	Measured Diameter mm	10	10	Satisfactory
2	Wt/m Length (Kg/m)	0.618	0.617	Satisfactory
3	Bend & RebendTest	Pass	Should not Crack or Fracture	Satisfactory
4	Elongation (%)	13.4	12	Satisfactory
5	Yield Stress(N/Sq.mm)	508	500	Satisfactory
6	U T S (N/Sq.mm)	564	545	Satisfactory

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TEST REPORT

TESTS ON REINFORCEMENT STEEL BAR 12 mm

Name & Address of the Customer	AEE, Yelahanka Satellite Sub Division, BBMP
Name of Work	Improvements of roads and drains in A Sector in ward no. 04, Yelahanka New Town Sub Division.
Name of the Agency	Sri. B. P. Mahesh.
Date of Testing	04/03/2016
Grade of Steel	Fe - 500.

Sl.No.	Description	Result	IS 1786-2008 Min. Requirements	Remarks
1	Measured Diameter mm	12	12	Satisfactory
2	Wt/m Length (Kg/m)	0.889	0.888	Satisfactory
3	Bend & RebendTest	Pass	Should not Crack or Fracture	Satisfactory
4	Elongation (%)	14.2	12	Satisfactory
5	Yield Stress(N/Sq.mm)	511	500	Satisfactory
6	U T S (N/Sq.mm)	568	545	Satisfactory

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RamSanjeev AE

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TEST REPORT

TESTS ON REINFORCEMENT STEEL BAR 16 mm

Name & Address of the Customer	AEE, Yelahanka Satellite Sub Division, BBMP
Name of Work	Improvements of roads and drains in A Sector in ward no. 04, Yelahanka New Town Sub Division.
Name of the Agency	Sri. B. P. Mahesh.
Date of testing	04/03/2016
Grade of Steel	Fe - 500.

Sl.No.	Description	Result	IS 1786-2008 Min. Requirements	Remarks
1	Measured Diameter mm	16	16	Satisfactory
2	Wt/m Length (Kg/m)	1.6	1.58	Satisfactory
3	Bend & RebendTest	Pass	Should not Crack or Fracture	Satisfactory
4	Elongation (%)	15.1	12	Satisfactory
5	Yield Stress(N/Sq.mm)	515	500	Satisfactory
6	U T S (N/Sq.mm)	572	545	Satisfactory

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